

Future Flight Design			
2006 Science			
Grade Level and Grade Span Expectations			
New Hampshire Science			
Grades 5-6			
Activity/Lesson	State	Standards	
Air Transportation Problem	NH	SCI.5-6.S:SPS1:6:2.2	Identify and utilize appropriate tools/technology for collecting data in designing investigations.
Air Transportation Problem	NH	SCI.5-6.S:SPS1:6:3.2	Use appropriate tools to collect and record data.
Air Transportation Problem	NH	SCI.5-6.S:SPS1:6:4.1	Use appropriate tools to organize, represent, analyze and explain data.
Air Transportation Problem	NH	SCI.5-6.S:SPS1:6:4.3	Compare and display data in a variety of student or computer generated formats (such as diagrams, flow charts, tables, bar graphs, line graphs, scatter plots, and histograms).
Air Transportation Problem	NH	SCI.5-6.S:SPS4:8:2.1	Use a wide range of tools and a variety of oral, written, and graphic formats to share information and results from observations and investigations.
Air Transportation Problem	NH	SCI.5-6.S:SPS4:8:4.2	Use evidence collected from observations or other sources and use them to create models and explanations.
Aircraft Design Problem	NH	SCI.5-6.S:ESS4:6:1.1	Understand that technology is used to design tools that improve our ability to measure and observe the world.
Aircraft Design Problem	NH	SCI.5-6.S:PS3:6:1.2	Explain that when a force is applied to an object, it reacts in one of three ways: the object either speeds up, slows down, or goes in a different direction.
Aircraft Design Problem	NH	SCI.5-6.S:PS3:6:1.3	Describe the relationship between the strength of a force on an object and the resulting effect, such as the greater the force, the greater the change in motion.
Aircraft Design Problem	NH	SCI.5-6.S:PS3:6:2.1	Explain the how balanced and unbalanced forces are related to an object's motion.
Aircraft Design Problem	NH	SCI.5-6.S:PS3:6:2.2	Explain that an object's motion can be tracked and measured over time and that the data can be used to describe its position.
Aircraft Design Problem	NH	SCI.5-6.S:PS4:6:1.1	Understand that scientific principles are used in the design of technology.
Aircraft Design Problem	NH	SCI.5-6.S:SPS1:6:2.3	Incorporate components of good experimental design, such as controls and multiple trials, into investigations.
Aircraft Design Problem	NH	SCI.5-6.S:SPS2:6:2.1	Recognize that thinking about things as systems means looking for how every part relates to others.

Aircraft Design Problem	NH	SCI.5-6.S:SPS3:6:3.1	Identify problems/issues that can be addressed by design technology.
Aircraft Design Problem	NH	SCI.5-6.S:SPS3:6:3.2	Identify and describe the procedure for designing a product, including identifying a need, researching, brainstorming, selecting, developing a prototype, testing and evaluating.
Aircraft Design Problem	NH	SCI.5-6.S:SPS3:6:3.3	Evaluate technological designs using established criteria.
Future Flight Design			
2006 Science			
Grade Level and Grade Span Expectations			
New Hampshire Science			
Grades 7-8			
Activity/Lesson	State	Standards	
Air Transportation Problem	NH	SCI.7-8.S:SPS2:8:2.2	Collect data or use data provided to infer or predict that the total amount of mass in a closed system stays the same, regardless of how substances interact (conservation of matter).
Air Transportation Problem	NH	SCI.7-8.S:SPS1:8:1.1	Use appropriate tools to accurately collect and record both qualitative and quantitative data gathered through observations (e.g., temperature probes, electronic balances, spring scales, microscopes, stop watches).
Air Transportation Problem	NH	SCI.7-8.S:SPS1:8:3.2	Use appropriate tools to gather data as part of an investigation (e.g., ruler, meter stick, thermometer, spring scale, graduated cylinder, calipers, balance, probes, microscopes).
Air Transportation Problem	NH	SCI.7-8.S:SPS1:8:4.1	Use appropriate tools (including computer hardware and software) to collect, organize, represent, analyze and explain data.
Air Transportation Problem	NH	SCI.7-8.S:SPS1:8:4.3	Draw appropriate conclusions regarding the scientific question under investigation, based on the data collected.
Air Transportation Problem	NH	SCI.7-8.S:SPS2:8:1.1	Describe how scientific investigations usually involve the collection of relevant evidence, the use of logical reasoning, and the application of imagination in devising hypotheses and explanations to make sense of the collected evidence.
Air Transportation Problem	NH	SCI.7-8.S:SPS3:8:1.1	Work effectively within a cooperative group setting, accepting and executing assigned roles and responsibilities.
Air Transportation Problem	NH	SCI.7-8.S:SPS3:8:1.2	Work collectively within a group toward a common goal.

Air Transportation Problem	NH	SCI.7-8.S:SPS3:8:1.3	Demonstrate respect of one another's abilities and contributions to the group.
Air Transportation Problem	NH	SCI.7-8.S:SPS3:8:2.2	Judge the weaknesses and strengths of the information they are using.
Air Transportation Problem	NH	SCI.7-8.S:SPS4:8:1.2	Collect real-time observations and data, synthesizing and building upon existing information (e.g., online databases, NOAA, EPA, USGS) to solve problems.
Air Transportation Problem	NH	SCI.7-8.S:SPS4:8:1.3	Use appropriate tools to analyze and synthesize information (e.g., diagrams, flow charts, frequency tables, bar graphs, line graphs, stem-and-leaf plots) to draw conclusions and implications based on investigations of an issue or question.
Air Transportation Problem	NH	SCI.7-8.S:SPS4:8:2.1	Use a wide range of tools and a variety of oral, written, and graphic formats to share information and results from observations and investigations.
Air Transportation Problem	NH	SCI.7-8.S:SPS4:8:5.1	Use a variety of media tools to make oral and written presentations, which include written notes and descriptions, drawings, photos, and charts to communicate the procedures and results of an investigation.
Air Transportation Problem	NH	SCI.7-8.S:SPS4:8:6.1	Work in diverse pairs/teams to answer questions, solve problems and make decisions.
Air Transportation Problem	NH	SCI.7-8.S:SPS4:8:6.2	Plan and develop team science projects.
Air Transportation Problem	NH	SCI.7-8.S:SPS4:8:6.3	Articulate understanding of content through personal interaction and sharing with peers.
Air Transportation Problem	NH	SCI.7-8.S:SPS4:8:8.1	Develop and execute a plan to collect and record accurate and complete data from various sources to solve a problem or answer a question; and gather and critically analyze data from a variety of sources.
Air Transportation Problem	NH	SCI.7-8.S:SPS4:8:8.2	Participate in science competitions, where students are responsible for creating a product or participating in an event.
Aircraft Design Problem	NH	SCI.7-8.S:PS3:8:1.3	Use data to determine or predict the overall (net) effect of multiple forces (e.g., friction, gravitational, magnetic) on the position, speed, and direction of motion of objects.
Aircraft Design Problem	NH	SCI.7-8.S:PS3:8:2.2	Explain how the motion of an object can be described by its position, direction of motion, and speed; and illustrate how that motion can be measured and represented graphically.

Aircraft Design Problem	NH	SCI.7-8.S:PS4:8:1.1	Understand that design features, such as size shape, weight, and function, must be considered when designing new technology.
Aircraft Design Problem	NH	SCI.7-8.S:SPS2:8:2.1	Understand that any system is usually connected to other systems, both internally and externally; thus a system may be thought of as containing subsystems and as being a subsystem of a larger system.
Aircraft Design Problem	NH	SCI.7-8.S:SPS2:8:2.3	Realize that as the complexity of any system increases, gaining an understanding of it depends increasingly on summaries (such as averages and ranges) and on descriptions of typical examples of that system.
Aircraft Design Problem	NH	SCI.7-8.S:SPS2:8:3.4	Recognize that as the complexity of any system increases, gaining an understanding increasingly depends on summaries (such as averages and ranges) and on descriptions of typical examples of that system.
Aircraft Design Problem	NH	SCI.7-8.S:SPS2:8:4.2	Recognize how many systems contain feedback mechanisms that serve to keep changes within specified limits.
Aircraft Design Problem	NH	SCI.7-8.S:SPS3:8:3.2	Build a product that has been designed in class.
Aircraft Design Problem	NH	SCI.7-8.S:SPS3:8:3.3	Evaluate student-designed products according to established criteria and recommend improvements or modifications.
Aircraft Design Problem	NH	SCI.7-8.S:SPS4:8:3.3	Make sketches, graphs, and diagrams to explain ideas and to demonstrate the interconnections between systems.